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File Code: 3410 **Date:** October 5, 1998
Route To:

Subject: 1998 Insect and Disease Aerial Detection Survey

To: Area Director
Bureau of Indian Affairs
Navajo Area Office
Branch of Forestry
P.O. Box 1060
Gallup, NM 87305

The Arizona Zone of Entomology and Pathology conducted the annual insect and disease aerial survey for the Navajo Indian Reservation on September 9,10 and 23, 1998. Enclosed you will find one copy each of 6 maps depicting the forest insect and pathogen activity for 1998. To facilitate future analysis needs and to standardize national reporting, conditions are now being recorded on USGS 1:100,000-scale metric topographic maps.

Mortality in the ponderosa pine type due to bark beetles was down in 1998 (126 acres) from 1997 (1,945 acres). Mortality in 1998 was attributed to *Ips* spp. and western pine beetle. Small pockets of mortality usually ranged from 1 to 10 trees, and was scattered throughout the ponderosa pine type on the Reservation.

Aspen defoliation increased from 23 acres in 1997 to 4,328 acres in 1998. Defoliation ranged from light to heavy (light, 548 acres, moderate 3,018 acres and heavy 762 acres) and was concentrated in the Chuska and Lukachukai Mountains. Western spruce budworm defoliation increased in 1998 to 2,803 acres (moderate defoliation, 2,777 acres; heavy defoliation, 26 acres) from 582 acres in 1997. Most of the defoliation was found in the areas to the east and north of Matthews Peak.

Spruce mortality was detected on 140 acres in pockets of 1 to 20 trees spread throughout the host type. Douglas-fir mortality decreased from 175 acres in 1997 to 29 acres in 1998.

Pinyon sawfly, in conjunction with pinyon needle scale, continue to defoliate pinyon trees near Canyon de Chelly. The problem seems to be widespread with 15,250 acres of moderate defoliation and 37,300 acres of light defoliation being noted in the area. Insect populations on the south rim of the canyon have declined with only light defoliation noted. Heavier defoliation was noted on the far eastern portion of the north rim and to the north and east of the Canyon in the vicinity of Tsaile Lake. Diseased larvae were found throughout the infested area indicating that population should continue to decline. Ann Lynch of the Rocky Mountain Research Station and Mike Wagner of NAU will continue to research this problem. The Arizona Zone will work with the researchers and include the area in the annual survey.

Evidence of fire was recorded on 2,749 acres, most of it to the south and east of Canyon de Chelly.

If you have any questions concerning the survey or the information included here, please feel free to contact Bobbe Fitzgibbon (520-556-2072) or Steve Dudley (520-556-2071).

/s/ Borys M. Tkacz

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Zone Leader, Arizona Zone Entomology and Pathology

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